address is X=1052 and Y=32, which is in the upper left area of address carpet **12**, then the user has selected CloseWin.avi. Computer **1712** utilizes a table that associates X, Y coordinates to one or more functions that are to be performed based on the X, Y coordinates. For example, in the above example, X=1052 and Y=32 would be associated with the one or more functions to be performed when a user selects CloseWin.avi. Activation could be signaled to computer **1712** by button **1714**, such as a click or multiple click. Alternatively, activation could be signaled to computer **1712** by holding the image capture steady for a certain time. The precision of location selection is one glyph unit and the resolution of differentiated selection can be as fine as one glyph unit. Resolution can be extended to a fraction of a glyph unit provided the capture selection device can be referenced to the address carpet to within a fraction of a glyph interval. For example, a camera pixel is typically fraction of a glyph interval.

H. Camera Pen

FIGS. **27**(*a*), **27**(*b*), and **27**(*c*) show front, side and top views, respectively, of one embodiment of camera pen **1710** of FIG. **17**. The pen includes a camera **2716** encased in case **2718**. Case **2718** has a button **2710**, switch **2714**, and landing gear **2712** attached thereto. Button **2710**, when pressed by a user, activates switch **2714** to signal computer **1712** that an image is to be captured. Landing gear **2712** is a rigid or skeletal structure, and is angled so as to allow a user to hold the pen against a substrate at a natural ergonomic angle, similar to a pen with a predetermined working distance from the substrate to the face of the camera lens on camera **2716**.

FIGS. **28**(*a*) and **28**(*b*) show side and front views, respectively, of another embodiment of camera pen **1710** of FIG. **17**. The pen is comprised of camera **2814** encased in case **2818**. Case **2818** has a switch **2812** and landing gear **2810** attached thereto. Switch **2812** is activated by a user pressing down on button **2812**, which activates switch **2816** to signal to computer **1712** that an image is to be captured. Landing gear **2810**, like the landing gear **2712** of FIG. **27**, is angled so as to allow a user to hold the pen against a substrate at a natural economic angle, similar to a pen. Landing gear **2810**, however, is a clear or translucent truncated cone in the embodiment shown in FIG. **28**.

In either the skeletal or clear cone embodiment, the landing gear of the camera pen may include selection assistance elements, such as marks or protrusions, that are used by the user to select an area of the image. For example, the landing gear might include cross hairs, a printed arrow, or a protruding nub, that a user places over or on the area being selected.

I. Selection Alternatives

The embodiments described have used a device like camera pen **1710** to capture a portion of glyph carpet associated with a selection. Other selection apparatus may also be used. In general, any device may be used that identifies selection location to a user or machine and provides a corresponding registered image capture portion of the address carpet.

FIG. **29** is a block diagram that illustrates a glyph address carpet **2920**, which can be read by a pan and zoom camera **2912**. The captured portion of glyph address carpet **2920** can then be processed by computer **2918**. Camera **2912** scans glyph address carpet **2920** for an area **2916** on glyph address carpet **2920** pointed to by handheld laser pointer **2910**.

Camera **2912** captures the portion of the glyph address carpet being pointed at and transmits the portion to computer **2918** for processing in response to the selection. Alternatively, or additionally, camera **2912** could capture wide area **2914** for processing. The computer image processing recognizes the pointer location by conventional image recognition techniques.

FIG. **30** is a block diagram that illustrates a glyph address carpet **3020**, which can be read by a pan and zoom camera **3012**. The captured portion of glyph address carpet **3020** can then be processed by computer **3018**. Camera **3012** scans glyph address carpet to determine whether handheld pointer **3010** is pointing to an area **3016** on glyph address carpet **3020**. If handheld pointer **3010** is pointing to an area, camera **3012** captures the portion of the glyph address carpet near the area being pointed at, and transmits the captured portion to computer **3018**. Alternatively, or additionally, camera **3012** could capture wide area **3014** for processing in response to the selection.

FIG. **31** is a block diagram that illustrates a glyph address carpet **3120**, which can be read by a pan and zoom camera **3112**. The captured portion of glyph address carpet **3120** can then be processed by computer **3118**. Camera **3112** scans glyph address carpet **3120** for highlighted area **3116**, and captures the portion of the glyph address carpet in the area defined by highlighting **3116**. Highlighting **3116** could be any type of highlighting. For example, highlighting **3116** could be a color, a distinctive border, or even a checkmark or other type of handmade mark. Alternatively, or additionally, camera **3112** could capture wide area **3114** for processing in response to the selection.

Similarly, in one embodiment, device **3112** is a document image scanner that captures the image of a document having an address carpet graphical user interface image marked for selection (e.g., check, circle, highlight). The marks are recognizable by conventional techniques of image processing (e.g., color, black, white).

J. Conclusion

Methods, systems and articles of manufacture consistent with the present invention therefore facilitate implementation of a graphical user interface using glyph address carpets. The foregoing description of an implementation of the invention has been presented for purposes of illustration and description. It is not exhaustive and does not limit the invention to the precise form disclosed. Modifications and variations are possible in light of the above teachings or may be acquired from practicing of the invention.

What is claimed is:

1. Apparatus for capturing an image, comprising:

a pen-style housing;

a reflector at one end of said housing;

a camera contained within said housing and oriented to capture an image through an opening defined by said reflector; and

a button attached to said housing for sending a signal to a processor, that directs the camera to capture an image and transmit the image to the processor in response to pressing of said button by a user.

2. The apparatus according to claim **1**, wherein said reflector comprises a cage structure.

3. The apparatus according to claim **1**, wherein said reflector comprises a cone structure.

4. The apparatus according to claim **3**, wherein the cone structure comprises a substantially clear material that allows visual observation of a substrate through the cone structure.